

May 19, 2011

Chairman Bob Weisenmiller
Commissioner Karen Douglas
CA Energy Commission Docket Office, MS-4
1516 Ninth Street
Sacramento CA 95814-5512

DOCKET

11-IEP-1N

DATE May 19 2011

RECD. May 19 2011

Re: Docket # 11-IEP-1N

Dear Chairman Weisenmiller and Commissioner Douglas:

SolarReserve thanks the Energy Commission for this opportunity to comment on the topic of the recent workshop on Energy Storage on April 28, 2011. The workshop will certainly help the CEC develop the beginnings of policy consensus and identify critical action items needed to ensure that efficient, cost-effective energy storage is included in the energy portfolio options available to all the load serving entities in California.

SolarReserve LLC, headquartered in Santa Monica, California, is a solar energy project development company developing large-scale concentrated solar power (CSP) projects worldwide. It holds the exclusive worldwide license to the molten salt power tower technology developed by United Technologies Corporation.

SolarReserve's molten salt, concentrating solar power tower technology was successfully demonstrated in California under two U.S. Department of Energy-sponsored pilot projects in the 1980s and 1990s known as Solar One and Solar Two. The 10 MW pilot facility at Solar Two utilized a molten salt receiver designed, engineered, and assembled by Rocketdyne, now a part of United Technologies Corporation. A consortium of major utilities and industrial partners took part in Solar Two as well. Today, SolarReserve is the leading global developer of CSP projects with molten salt thermal energy storage technology with direct heritage to Solar One and Solar Two.

SolarReserve respectfully submits the following comments as part of the record in this proceeding:

1. Intermittent renewables are making energy storage more and more relevant to California.

- There is a strong consensus from workshop presenters and other stakeholders in the California energy generation and transmission community that there will be an increasing need for intermittency management – whether via storage, curtailment, dispatchability, demand response, etc.
- There also appears to be a strong consensus that evaluation of storage should be technologically-neutral, reflecting the principles of a least-cost, best-fit evaluation approach. The Energy Commission (or the PUC or CAISO) should not try to pick

winners and losers based on technology preferences that may quickly be obsolete in a rapidly evolving industry.

- Storage is not strictly a renewable energy issue. Storage, correctly applied, stabilizes the entire transmission grid and enhances system reliability.

2. The cost of managing the intermittency from California's renewable portfolio will be significant.

- Many technological solutions discussed at the workshop are years away from commercial readiness, yet much intermittent renewable generation is being added to the grid today and much more is in the development pipeline.
- Actual deployment costs of many battery-based storage solutions are still unknown as performance testing and early-stage technology R&D continues.
- The future cost of intermittent renewables may not be sufficiently recognized today when those renewables are being added to the system.

3. Procuring dispatchable renewables that improve grid stability and operations rather than degrade them should be considered a priority for California.

- There is an absolute link between ever-increasing costs for intermittency mitigation and the renewable procurement choices made to date in California.
- Cost-effective, proactive measures taken today could make a huge difference in the optimum portfolio and cost mix of energy storage technologies in the future.
- If renewable procurement and the recognition of the cost of intermittency are not linked, California may be creating an expensive problem in the long run.

4. This is a complex issue that requires new policies, coordination of multiple agencies and focus on a least-cost, best-fit evaluation methodology.

- CAISO is in the process of developing market products to help stakeholders better evaluate the contribution storage can make to its system efficiency and reliability.
- However, due to financing needs, renewable projects that incorporate energy storage cannot depend on spot markets for revenues from ancillary services.
- Compensation for provision of these valuable, grid-supporting and grid-strengthening services must be formalized and incorporated into pro forma PPAs so that dispatchable renewable units are properly valued.

5. SolarReserve's solar thermal technology with molten salt energy storage is fully dispatchable, yet fully renewable, and commercially available today.

- A 150 MW SolarReserve project has already been licensed by the CEC and has obtained a PPA with a major California utility.
- SolarReserve's integrated molten salt technology allows the facilities to perform as well or better than conventional steam turbines fueled by fossil fuels, including the following capabilities:
 - ramp up and ramp down
 - load following
 - frequency regulation
 - spinning reserves

SOLARRESERVE®

- scheduled deliveries
- full capacity available during peak demand periods
- For example, dispatchable solar energy can respond to the large-scale swings in supply, bringing hundreds of megawatts online when the sun is setting and photovoltaics are ramping down.

SolarReserve appreciates the opportunity to contribute to this important policy development process. We look forward to working with the CEC on this topic as significant amounts of renewable generation continue to be integrated into the California transmission grid.

Regards,



Adam Green
Development Manager
SolarReserve
2425 Olympic Blvd., Suite 500 East
Santa Monica CA 90404
Adam.green@solarreserve.com